

2. (Amended) The method of claim 1, wherein said manner is selected according to at least one criterion selected from the group consisting of:

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- (i) a level of expression of said heterologous protein;
 - (ii) a distribution of said heterologous protein in said plant tissue;
 - (iii) binding activity of said heterologous protein toward said plant essential factor;
 - (iv) abundance and distribution of said plant essential factor in said cells; and
 - (v) a level of said factor externally provided to the vegetative plant tissue.

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7. (Amended) The transgenic plant of claim 6, wherein said heterologous protein is selected from the group consisting of avidin, streptavidin, biotin binding derivatives and modificants thereof.

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9. (Amended) The method of claim 1, wherein said heterologous protein is expressed within the cytoplasm of said cells of the vegetative plant tissue so as to lead to said depletion of said essential factor present within said cytoplasm, such that said plant viability is maintained, while at the same time, said degeneration of the vegetative plant tissue is effected.

10. (Amended) The method of claim 1, wherein said heterologous protein is expressed within a DNA containing organelle of said cells of the vegetative plant tissue so as to lead to said depletion of said essential factor present within said DNA containing organelle, such that said plant viability is maintained, while at the same time, said degeneration of the vegetative plant tissue is effected.

11. (Amended) The method of claim 1, wherein said heterologous protein includes a leader peptide capable of self targeting into a DNA containing organelle, such that when said heterologous protein is expressed within the cytoplasm of said cells of the vegetative plant tissue said leader peptide directs

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said heterologous protein into said DNA containing organelle, so as to lead to said depletion of said essential factor present within said DNA containing organelle such that said plant viability is maintained, while at the same time, said degeneration of the vegetative plant tissue is effected.

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13. (Amended) The method of claim 1, wherein said degeneration of plant vegetative tissue is effected for controlling morphology of the plant.

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14. (Amended) The method of claim 1, wherein said degeneration of plant vegetative tissue is effected for controlling development of the plant.

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18. (Amended) A transgenic plant expressing a heterologous protein capable of binding a plant essential factor, wherein expressing said heterologous protein is effected in a manner so as to lead to a depletion of said essential factor such that plant viability is maintained, while at the same time, degeneration of vegetative plant tissue of the transgenic plant is effected.

19. (Amended) The transgenic plant of claim 18, wherein said manner is selected according to at least one criterion selected from the group consisting of:

- (i) a level of expression of said heterologous protein;
- (ii) a distribution of said heterologous protein in said plant tissue;
- (iii) binding activity of said heterologous protein toward said essential factor;
- (iv) abundance and distribution of said essential factor in said cells; and
- (v) a level of said factor externally provided to said vegetative plant tissue.

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22. (Amended) The transgenic plant of claim 18, wherein said heterologous protein is selected from the group consisting of avidin, streptavidin, biotin binding derivatives and modificants thereof.

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24. (Amended) The transgenic plant of claim 18, wherein said heterologous protein is expressed within the cytoplasm of vegetative cells of the transgenic plant, so as to lead to said depletion of said essential factor present within said cytoplasm, such that said plant viability is maintained, while at the same time, said degeneration of said vegetative cells is effected.

25. (Amended) The transgenic plant of claim 18, wherein said heterologous protein is expressed within a DNA containing organelle of vegetative cells of the transgenic plant, so as to lead to said depletion of said essential factor present within said DNA containing organelle, such that said plant viability is maintained, while at the same time, said degeneration of said vegetative cells is effected.

26. (Amended) The transgenic plant of claim 18, wherein said heterologous protein is targeted into a DNA containing organelle of vegetative cells of the transgenic plant following expression thereof within the cytoplasm of said vegetative cells, so as to lead to said depletion of said essential factor present within said DNA containing organelle, such that said plant viability is maintained, while at the same time, said degeneration of said vegetative cells is effected.

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28. (Amended) A transgenic plant comprising vegetative plant cells transformed with an expression cassette including a first polynucleotide segment under a transcriptional control of a plant promoter, wherein said first polynucleotide segment encodes a heterologous protein which binds a sufficient amount of a plant essential factor to thereby cause degeneration of a vegetative plant tissue, while at the same time, maintain plant viability.

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31. (Amended) The transgenic plant of claim 28, wherein said promoter is a plant derived promoter or a plant virus derived promoter.

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33. (Amended) The transgenic plant of claim 28, wherein said heterologous protein is selected from the group consisting of avidin, streptavidin,

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biotin binding derivatives and modificants thereof.

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35. (Amended) The transgenic plant of claim 28, wherein said expression cassette transforms a genome of a DNA containing organelle of said vegetative plant cells such that said heterologous protein is expressed within said DNA containing organelle, so as to lead to said depletion of said essential factor present within said DNA containing organelle, such that degeneration of said vegetative plant tissue is effected.

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36. (Amended) The transgenic plant of claim 28, wherein said expression cassette further includes a second polynucleotide segment coding for a leader peptide capable of self targeting into a DNA containing organelle, said second polynucleotide segment being in frame to said first polynucleotide segment, such that when said expression cassette is expressed within a cytoplasm of said vegetative plant cells, said leader peptide directs said heterologous protein into said DNA containing organelle, so as to lead to said depletion of said essential factor present within said DNA containing organelle, such that said degeneration of said vegetative plant tissue is effected.

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38. (Amended) The transgenic plant of claim 28, wherein said heterologous protein is expressed within the cytoplasm of said vegetative plant cells, so as to lead to said depletion of said essential factor present within said cytoplasm, such that said degeneration of said vegetative plant tissue is effected.

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50. (Amended) A plant comprising vegetative tissue expressing a heterologous protein being bound to a plant essential factor, such that unbound and active form of said plant essential factor is depleted from said vegetative plant tissue, thereby effecting degeneration of said vegetative plant tissue.